

**SPACE TEST & ENGINEERING CONTRACT
(STEC) 2004**

**STATEMENT
OF
WORK**

6 December 2002

ATTACHMENT 1

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1.0 SCOPE

SMC DET 12/VO exercises a teaming approach to mission accomplishment. The Contractor shall be a full participant in this teaming arrangement with the Government, customers, associate contractors, and vendors. The support efforts will occur at, but not solely at, the following locations:

- Kirtland Air Force Base (AFB) NM
- Schriever AFB CO

1.1 CORE OPERATIONS

- 1.1.1 The contractor shall program and manage all activities for Core Operations.
 - 1.1.1.1 The contractor shall manage basic contract requirements.
 - 1.1.1.2 The contractor shall manage, track, and forecast the cost of on-going Core Operations efforts.
 - 1.1.1.3 The contractor shall manage information to assist VO in the conduct of Core Operations.
- 1.1.2 The contractor shall plan long-range activities, evaluate capacity, and make adjustments for Core Operations.
- 1.1.3 The contractor shall plan, support, and conduct operations for orbital space systems.
- 1.1.4 The contractor shall provide engineering sustainment for mission-unique applications for Core Operations and operations support for development of the system architecture.
- 1.1.5 The contractor shall train and certify personnel to support Core Operations.
- 1.1.6 The contractor shall comply with and participate in the Security and Information Assurance program in support of Core Operations.

1.2 CUSTOMER WORKLOAD

- 1.2.1 The contractor shall program and manage all activities required to execute Customer Workload.
 - 1.2.1.1 The contractor shall manage, track, and forecast the cost of on-going Customer Workload efforts.
 - 1.2.1.2 The contractor shall manage information to assist VO in the conduct of Customer Workload.
- 1.2.2 The contractor shall plan long-range activities, evaluate capacity, and make adjustments for baseline work, extended work, or new work in support of Customer Workload.
- 1.2.3 The contractor shall plan, prepare, develop, execute, evaluate, and document new operational and employment concepts.
- 1.2.4 The contractor shall perform readiness activities including planning, systems engineering, and technical support for future missions.

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1.2.5 The contractor shall plan, support, and conduct operations for orbital space systems, ballistic missiles, upper stages, launch vehicles, and other special test activities.

1.2.6 The contractor shall provide engineering development for mission-unique applications for Customer Workload.

1.2.7 The contractor shall train and certify personnel for execution of Customer Workload.

1.2.8 The contractor shall comply with and participate in the Security and Information Assurance program in support of Customer Workload.

2.0 REFERENCE DOCUMENTS

- AFI 90-901, Operational Risk Management
- MIL-STD 882, DoD Standard Practice for System Safety
- MIL-HDBK 881, Work Breakdown Structure
- MIL-HDBK 1785, System Security Engineering Program Management Requirements
- Current DOD, AF, AFSPC, and Local Security and Information Assurance Regulations
- Current USSPACECOM and AFSPC/50SW Operating Instructions and Procedures Applicable to VO Operations
- Current SMC DET 12/VO operating procedures and configuration management plans
- AFSCN Interface Specifications

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3.0 PROGRAM MANAGEMENT

3.1 CORE OPERATIONS

3.1.1 Contract Management

3.1.1.1 Provide effective coordination between the Government and the Contractor to ensure successful implementation of Core Operations requirements.

3.1.1.2 Identify a single point of contact to the Government for management of the contractor effort under this contract.

3.1.1.3 Notify the Contracting Officer in writing if there is work required beyond the scope of the contract. The Contracting Officer is the only person authorized to change the terms and conditions of the contract. All technical and management interchange between the Government and the contractor personnel shall be conducted subject to this condition.

3.1.1.4 Notify the Government of any problems in meeting contract requirements as soon as the problems are known.

3.1.1.5 Ensure all contractor personnel attend Government-provided training and comply with security and information assurance guidance.

3.1.1.6 Provide a smooth and efficient transfer of responsibility during the designated phase-in period. Plan the phase-in and work with the incumbent to finalize a joint phase-in plan.

CDRL A001 Contract Performance Plan

3.1.1.7 Cooperate with the successor and the Government at the end of this contract. Maintain overall contract responsibility until successful transfer to the successor, as determined by the Government. Plan the phase-out and make the plan available for follow-on source selection activities. Work with the successor to finalize a joint phase-out plan.

CDRL A001 Contract Performance Plan

3.1.2 Cost Management

3.1.2.1 Maintain a Contract Work Breakdown Structure (CWBS) and integrate with cost and schedule management tools.

CDRL A002 Contract Work Breakdown Structure

3.1.2.2 Prepare cost estimates for specific projects within the scope of this SOW as required, using the CWBS framework on the contract. If the Government accepts the potential project and notifies the Contractor, incorporate all the proposed CWBS and schedule elements into your working CWBS and Integrated Schedule.

CDRL A003 Man-hour Estimate, Technical Cost Proposals

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3.1.2.3 Maintain an Integrated Schedule that accounts for all on-going efforts, including those of associate contractors, and complies with requirements provided by the Integrated Product Teams.

CDRL A004 Integrated Master Schedule

3.1.2.4 Manage travel budgets, track actual costs, and forecast planned expenditures.

3.1.2.5 Provide reports and informal reviews integrating technical accomplishments with the cost and schedule status of work progress on the contract.

CDRL A005 Funds & Labor Hour Expenditure Report

3.1.3 Information Management

Work with the Government and associate contractors to manage data. Ensure documents remain current and easily accessible.

CDRL A006 Technical Report - Studies, Services

3.1.3.1 Maintain operational procedures, technical data, test plans, test reports, evaluation plans, evaluation reports, mission interface documents, and other documents required to conduct activities assigned under this contract. Make the data available to the Government and associate contractors.

3.1.3.2 Maintain engineering and operations documentation on the operational documentation servers, which are available to all users of the RSC and CERES via the Wide Area Network.

3.1.3.3 Use an information management system, as specified by the government, to share common-use matter across sites, with associate contractors, and with external agencies.

3.2 CUSTOMER WORKLOAD

3.2.1 Cost Management

3.2.1.1 Maintain a Contract Work Breakdown Structure (CWBS) and integrate with cost and schedule management tools.

CDRL A002 Contract Work Breakdown Structure

3.2.1.2 Prepare cost estimates for specific projects within the scope of this SOW as required, using the CWBS framework on the contract. If the Government accepts the potential project and notifies the Contractor, incorporate all the proposed CWBS and schedule elements into your working CWBS and Integrated Schedule.

CDRL A003 Man-hour Estimate, Technical Cost Proposals

3.2.1.3 Maintain an Integrated Schedule that accounts for all on-going efforts, including those of associate contractors, and complies with requirements provided by the Integrated Product Teams.

CDRL A004 Integrated Master Schedule

3.2.1.4 Manage travel budgets, track actual costs, and forecast planned expenditures.

3.2.1.5 Provide reports and informal reviews integrating technical accomplishments with the cost and schedule status of work progress on the contract.

CDRL A005 Funds & Labor Hour Expenditure Report

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3.2.1.6 Provide customer briefings and written reports.

CDRL A006 Technical Report - Studies, Services

3.2.2 Information Management

Work with the Government and associate contractors to manage data. Ensure documents remain current and easily accessible.

CDRL A006 Technical Report - Studies, Services

3.2.2.1 Maintain operational procedures, technical data, test plans, test reports, evaluation plans, evaluation reports, mission interface documents, and other documents required to conduct activities assigned under this contract. Make the data available to the Government and associate contractors.

3.2.2.2 Maintain engineering and operations documentation on the operational documentation servers, which are available to all users of the RSC and CERES via the Wide Area Network.

3.2.2.3 Use an information management system, as specified by the government, to share common-use matter across sites, with associate contractors, and with external agencies.

4.0 PROGRAM PLANNING

Conduct and document long-range planning activities to analyze requirements and identify new capabilities to support current and future programs. Develop a method for prioritizing these requirements. Analyze the scope of new work or extended work and verify VO's capability and capacity to accept or retain the work. Recommend which facility would optimally support the work.

CDRL A006 Technical Report - Studies, Services

4.1 CORE OPERATIONS

4.1.1 Track resources used for on-going efforts and forecast resources needed for projected efforts.

CDRL A005 Funds & Labor Hour Expenditure Report

4.1.1.1 Provide appropriate representation and participation in meetings as required at various locations.

4.1.2 Perform analysis on ground system loading to forecast the ability of VO's resources to support new space programs and other requirements as identified by the Air Force.

4.1.3 Analyze the capabilities and limitations of the SMC DET 12/VO infrastructure, the AFSCN, and other control networks in meeting future telemetry, commanding, tracking, and mission data processing requirements. Identify limitations and system deficiencies. Recommend workaround procedures or other corrective actions.

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4.2 CUSTOMER WORKLOAD

4.2.1 Track resources used for on-going efforts and forecast resources needed for projected efforts.

CDRL A005 Funds & Labor Hour Expenditure Report

4.2.1.1 Provide appropriate representation and participation in meetings as required at various locations.

4.2.2 Assist customers in developing mission requirements. Estimate the labor hours and associated costs to support current and future programs based on those requirements.

4.2.3 Analyze requirements for proposed missions to determine their compatibility with existing AFSCN or other control networks and VO's ground system hardware and software capabilities.

4.2.4 Identify potential risks, assess their importance and impact to mission operations and projects, and determine alternative solutions to mitigate moderate and high risks. Provide schedule, cost and technical risk information to aid in decision-making.

5.0 CONCEPT DEVELOPMENT

Support development of Operations and Employment Concepts for new satellite missions, Air Force Space Command (AFSPC), and other customers.

CDRL A006 Technical Report - Studies, Services

5.1 CORE OPERATIONS

Concept development is not required for Core Operations.

5.2 CUSTOMER WORKLOAD

5.2.1 Perform risk-reduction and proof-of-concept activities. These activities include, but are not limited to, small-scale implementation, testing, and evaluation.

5.2.2 Support evaluation of customer-originated Operational and Employment Concepts. Suggest alternatives and improvements to the concepts under evaluation. Support the development and testing of procedures and training.

5.2.3 Originate new Operations and Employment Concepts. Plan, prepare, develop, execute, evaluate, and document these concepts.

5.2.4 Support transition of Operations and Employment Concepts to other agencies. Transition will include transfer of databases, equipment lists, checklists, pass plans, and other documentation generated during concept exploration and development.

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6.0 MISSION READINESS

Support mission readiness activities in preparation for launch and operations of new satellites or for satellite control authority (SCA) transfer from/to other agencies. Activities include planning, preparation, execution, and evaluation for satellite and launch vehicle rehearsals, exercises, and compatibility tests.

CDRL A006 Technical Report - Studies, Services

6.1 CORE OPERATIONS

Maintain expertise to support new mission readiness activities.

6.2 CUSTOMER WORKLOAD

6.2.1 Participate in and support technical and operational meetings, test activities, and reviews at various locations.

6.2.2 Prepare and review mission-specific documentation, which may include procedures, on-console handbooks, anomaly response plans, requirements documents, and test plans.

6.2.2.1 Develop procedures to maximize data retrieval and vehicle life and implement them as appropriate.

6.2.2.2 Develop anomaly response plans that address: safing the vehicle, notifying agencies of the change in vehicle status, establishing tiger-team composition, and designating authority and responsibility for recovery plans.

6.2.3 Plan, manage, conduct, and evaluate mission specific exercises and rehearsals to demonstrate launch and on-orbit readiness.

7.0 OPERATIONS SUPPORT

Plan, support, and conduct operations for orbital space systems, ballistic missiles, upper stages, launch vehicles, and other special test activities. Establish, implement, and maintain standardized operating procedures. Issue instructions to and coordinate with appropriate elements of the Air Force Satellite Control Network (AFSCN), other government organizations, and/or commercial organizations. Perform conflict resolution to support the acquisition, tracking, commanding, control, and telemetry data acquisition for space vehicles. Perform mission data reduction and analysis and data delivery to the customers. Support operational transition of satellites to different ground support complexes as required.

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7.1 CORE OPERATIONS

- 7.1.1 Provide for flexibility to support operations that can vary from one shift, 5 days a week to 24 hours a day, 7 days a week.
- 7.1.2 Create, validate, and/or comply with documentation products. This includes both those documents that must be produced by SMC DET 12/VO and those produced by other work centers that require SMC DET 12/VO review, coordination, or approval.
- 7.1.3 Implement anomaly response plans, participate in tiger-team discussions, propose and evaluate recovery actions, and implement approved solutions.
- 7.1.4 Perform long-term trending of vehicle telemetry and notify the government of trends that indicate potential vehicle problems.
- 7.1.5 Perform mission and pre-pass planning, scheduling, orbit analysis and orbit product generation functions, and coordination required to achieve contact success.
- 7.1.6 Perform real-time evaluation of spacecraft, payload, and ground systems status in accordance with mission requirements.
 - 7.1.6.1 Perform real-time trending analysis. Identify anomalous conditions.
 - 7.1.6.2 Provide initial troubleshooting to all operational problems, document the problems, and participate in resolution activities.
- 7.1.7 Issue all commands, directives, and other instructions to fixed, deployable, and mobile tracking stations within specified timelines. Develop and implement commanding, tracking, and telemetry pre-pass tests.
- 7.1.8 Conduct post-pass critiques with tracking stations and other real-time support work centers and participate in technical meetings as required.
- 7.1.9 Maintain daily activity logs, which provide an accurate summary of all operations and maintenance events.
 - 7.1.9.1 Maintain data, historical files and logs of operational support provided, and report contact statistics daily.
 - 7.1.9.2 Provide anomaly and end-of-mission reports.
- 7.1.10 Perform operational testing on Core Operations assets and in support of Core System upgrades. This includes planning and preparation, operation of the equipment, database validation, performance evaluations, and suitability assessments. Develop and review test plans and procedures.

7.2 CUSTOMER WORKLOAD

- 7.2.1 Create, validate, and/or comply with documentation products. This includes both those documents that must be produced by SMC DET 12/VO and those produced by other work centers that require SMC DET 12/VO review, coordination, or approval.

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- 7.2.2 Implement anomaly response plans, participate in tiger-team discussions, propose and evaluate recovery actions, and implement approved solutions.
- 7.2.3 Perform long-term trending of vehicle telemetry and notify the government of trends that indicate potential vehicle problems.
- 7.2.4 Perform mission and pre-pass planning, scheduling, orbit analysis and orbit product generation functions, and coordination required to achieve contact success.
- 7.2.5 Perform real-time evaluation of spacecraft, payload, and ground systems status in accordance with mission requirements.
 - 7.2.5.1 Perform real-time trending analysis. Identify anomalous conditions.
 - 7.2.5.2 Provide initial troubleshooting to all operational problems, document the problems, and participate in resolution activities.
- 7.2.6 Issue all commands, directives, and other instructions to fixed, deployable, and mobile tracking stations within specified timelines. Develop and implement commanding, tracking, and telemetry pre-pass tests.
- 7.2.7 Conduct post-pass critiques with tracking stations and other real-time support work centers and participate in technical meetings as required.
- 7.2.8 Validate data quality in accordance with mission requirements documentation. Ensure that the required telemetry and mission data is collected, processed, analyzed, and distributed as specified.
- 7.2.9 Maintain daily activity logs, which provide an accurate summary of all operations and maintenance events.
 - 7.2.9.1 Maintain data, historical files and logs of operational support provided, and report contact statistics daily.
 - 7.2.9.2 Provide anomaly and end-of-mission reports.
- 7.2.10 Perform operational testing on Customer Workload assets. This includes planning and preparation, operation of the equipment, database validation, performance evaluations, and suitability assessments. Develop and review test plans and procedures.

8.0 ENGINEERING DEVELOPMENT

Perform all mission database and mission unique software (MUS) activities and support infrastructure development and modifications. Lead and participate in Integrated Product Teams (IPTs). Assist the government in, and comply with, all aspects of configuration management and integrated product/process development relating to this contract.

CDRL A004 Integrated Master Schedule

CDRL A006 Technical Report - Studies, Services

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8.1 CORE OPERATIONS

8.1.1 Mission-Unique Software

Design, develop, integrate, validate, and maintain mission databases and MUS to support Core Operations. Generate and maintain documentation required for mission unique items.

8.1.1.1 Develop and follow standard processes for performing software engineering functions.

8.1.1.2 For core software upgrades, perform conversions for mission-unique software, and develop coordinated test plans.

8.1.1.3 Perform system administration functions for Core Operations mission-unique applications.

8.1.1.3.1 Install and maintain Core Operations Mission Unique Software installed on the core architecture. Promote or demote readiness databases and files across the operational, regression and development environments to include creation of appropriate directory structures.

8.1.1.3.2 Perform configuration management of Core Operations mission related databases, files, and MUS. Resolve discrepancies identified in weekly system audits.

8.1.1.3.3 Perform housekeeping functions and collect metrics to ensure a Core Operations mission has the necessary disk space allocation throughout the life of the mission. Recover mission files for the operations, development, or regression environments as requested.

8.1.2 System Architecture

Support analysis, development, and modification of the SMC Det 12/VO ground system architecture.

8.1.2.1 Provide operations expertise to the SMC Det 12/VO community. Participate in system architecture IPTs, identify limitations and system deficiencies, and provide prioritized requirements.

8.1.2.2 Perform operational evaluation of potential core software releases and hardware upgrades. This includes planning and preparation, operation of the equipment, performance evaluations, and suitability assessments. Develop and review test plans and procedures.

8.1.2.3 Provide lessons learned for use in future ground system design and development.

8.2 CUSTOMER WORKLOAD

Design, develop, integrate, validate, and maintain mission databases and MUS to support assigned programs. Generate and maintain documentation required for mission unique items.

8.2.1 Follow standard processes for performing software engineering functions.

8.2.2 Within the mission IPT, recommend mission-unique solutions. Provide assessments on how well design approaches meet mission needs and integrate with current capabilities and brief those assessments during design reviews.

8.2.3 Perform developmental testing of mission databases and MUS.

8.2.4 Perform system administration functions for mission-unique applications, including data distribution systems.

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8.2.4.1 Install and maintain Customer Workload Mission Unique Software installed on the core architecture. Promote or demote readiness databases and files across the operational, regression and development environments to include creation of appropriate directory structures.

8.2.4.2 Perform configuration management of Customer Workload mission related databases, files, and MUS. Resolve discrepancies identified in weekly system audits.

8.2.4.3 Perform housekeeping functions and collect metrics to ensure a Customer Workload mission has the necessary disk space allocation throughout the life of the mission. Recover mission files for the operations, development, or regression environments as requested.

8.2.4.4 For stand-alone systems, establish user accounts and mission related directories for operations staff and external customers as necessary.

9.0 TECHNICAL TRAINING

Perform tasks necessary to verify the technical qualification of personnel. Track training and certification tasks within the CWBS.

9.1 CORE OPERATIONS

9.1.1 Implement and administer a technical training program to ensure contractor personnel are position certified and qualified to work Core Operations missions.

9.1.1.1 Periodically train, evaluate, and recertify contractor personnel for assigned missions.

9.1.1.2 Maintain training records on contractor employees.

9.1.1.3 Maintain training materials and update as necessary.

9.1.2 Obtain current training on industry standard applications, unique applications, and new technologies in the most economical manner available in support of Core Operations (i.e. computer-based, book-based, or class-based).

9.1.3 Provide training to government personnel as required.

9.1.3.1 Provide the opportunity for government attendance at contractor training sessions.

9.1.3.2 Provide orientation training as required.

9.2 CUSTOMER WORKLOAD

9.2.1 Implement and administer a technical training program to ensure contractor personnel are position certified and qualified to work on Customer Workload missions.

9.2.1.1 Initially train, evaluate, and certify contractor personnel for assigned missions.

9.2.1.2 Periodically train, evaluate, and recertify contractor personnel for assigned missions.

9.2.1.3 Maintain training records on contractor employees.

9.2.1.4 Maintain training materials and update as necessary.

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9.2.2 Obtain current training on industry standard applications, unique applications, and new technologies in the most economical manner available in support of Customer Workload (i.e. computer-based, book-based, or class-based).

9.2.3 Provide training to government personnel as required.

9.2.3.1 Provide the opportunity for government attendance at contractor training sessions.

9.2.3.2 Provide orientation training as required.

9.2.3.3 Initially train a limited number of government personnel on system operations.

10.0 SECURITY AND INFORMATION ASSURANCE (S/IA) SUPPORT

Comply with the Security and Information Assurance program.

10.1 CORE OPERATIONS

10.1.1 Review and comment on S/IA policy, plans, processes and procedures in support of Core Operations.

10.1.1.1 For computer security, review directives, requirements documents, and other documents to ensure information protect requirements are considered in program development. Assess new guidance for organizational scope and application and propose methodologies for employment/deployment as required.

10.1.1.2 For acquisition systems protection, support the development and maintenance of protection guides for major command, control, communication, computer, and intelligence systems.

10.1.2 Participate in S/IA meetings, working groups, tests, analyses, assessments, evaluations, surveys, and surveillance in support of Core Operations. Review programs for functional readiness, policy compliance and sustainment. Formulate methodologies and procedures to execute tasks.

10.1.3 Comply with physical security guidelines and perform physical security duties in support of Core Operations.

10.2 CUSTOMER WORKLOAD

10.2.1 Review and comment on S/IA policy, plans, processes and procedures in support of Customer Workload.

10.2.1.1 For computer security, review directives, requirements documents, and other documents to ensure information protect requirements are considered in program development. Assess new guidance for organizational scope and application and propose methodologies for employment/deployment as required.

10.2.1.2 For acquisition systems protection, support the development and maintenance of protection guides for major command, control, communication, computer, and intelligence systems.

10.2.2 Participate in S/IA meetings, working groups, tests, analyses, assessments, evaluations, surveys, and surveillance in support of Customer Workload. Review programs for functional

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readiness, policy compliance and sustainment. Formulate methodologies and procedures to execute tasks.

10.2.3 Comply with physical security guidelines and perform physical security duties in support of Customer Workload.